DELTA
Digital Video

MODEL 7821

2-CH HD/SD H.265 VIDEO ENCODER

TECHNICAL SPECIFICATIONS

FEATURES

- Real-time digital transmission of HD/SD full motion imagery
- H.265 HEVC / H.264 AVC
- HD/SD-SDI or Composite Video Input Interface
- 1080p/1080i/720p/480i/576i
- Primary/Secondary Video Encoding
- TS/UDP and RTSP/RTP/UDP Protocols
- MPEG-2 compliant TS multiplexing
- Synchronous Serial or Ethernet TS Interfaces
- 10/100/1000 network interface
- Data Rates from 128Kbps to 20Mbps
- <50ms Encode Latency
- Stereo/dual-channel audio inputs per channel
- MPEG-1 Layer II Audio Compression
- Metadata Support
  - Synchronous VANC
  - Serial
  - Ethernet
  - KLV Encoding
- MISB/STANAG Compliant
- IRIG-B/1PPS Time Input
- Serial or Ethernet port configurable

The Model 7821 2-Channel Encoder is an H.265 HD/SD video encoder that compresses video and audio signals, multiplexing them with metadata and other system information for real-time video transmission applications. The 7821 is capable of simultaneously encoding two channels of video with resolutions up to 1080p. Utilizing the H.265 (HEVC) video compression algorithm, the encoder provides high quality video transmission at various resolutions and a wide range of bandwidths. The H.265 compression algorithm utilizes highly bit-efficient coding to provide encoded streams at nearly half the bandwidth of its H.264 (AVC) predecessor. The unit is built on an advanced, low-power multimedia architecture that provides the horsepower for the computationally intensive H.265 algorithm, providing bandwidth efficiency for multi-channel applications. This increased efficiency allows for more channels to be transmitted over a given bandwidth, better quality video for constrained bandwidth applications, or lower bandwidth operation to extend the limits of ISR operation and reduce storage size requirements. A "Primary/Secondary" encoding feature enables a second, lower resolution, lower bit rate copy of each video input to be independently configured and streamed simultaneously for a maximum of four streams. The 7821 also provides an H.264 mode to support legacy infrastructures while providing a future growth path to H.265.

Designed for any airborne, ground-mobile, or shipboard application, the 7821 is compliant with the full motion video standards developed by the US Government's Motion Imagery Standards Board (MISB). This includes compliance with the video compression, KLV metadata, and transport stream profiles required to ensure interoperability in US and Allied processing, dissemination, and exploitation (PED) systems. Full DO-160/MIL-STD-810 environmental and MIL-STD-461 EMI qualification ensures the 7821 meets project requirements.

The 7821 is easily integrated into any FMV system, providing for legacy composite and all SDI standards. The unit provides Ethernet and synchronous serial transport interfaces along with multi-format metadata interfaces. Serial or Telnet control, and an easy to use web-GUI are provided for encoder set-up.

A division of Delta Information Systems, Inc.

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VIDEO INPUT

Ports	One
Format	SD/HD/3G-SDI (SMPTE) or Composite, Auto-detect format, resolution, frame rate
Levels	.3Vp-p; 75 Ohms/1Vp-p, 75 Ohms

VIDEO COMPRESSION

Algorithm	H.265 HEVC / H.264 AVC
Profile	MP, M10P / MP, HP
Resolutions	1080p/1080i/720p/480i/576i
Frame Rate	1-60
GOP Structure	Inter/Intra; Variable Size

TRANSPORT STREAM

Ports	Ethernet or RS-422
Protocol	ISO/IEC 13818-1 MPEG-2 Transport Stream containing Video/Audio/Data
Data Rate	128Kbps - 20Mbps
Ethernet Protocol	Transport Stream over UDP, unicast or multicast RTSP/RTP over UDP
Sync Serial	Transport Stream over PCM interface

ETHERNET INTERFACE

Format	10/100/1000 Base T, Auto Sense Bitrate, Auto Detect Duplex
Configuration	DHCP or Static Address

METADATA INTERFACE

Ports	Asynchronous serial, UDP, SDI-VANC
Format	KLV or unformatted data

TIME INTERFACE

Ports	1PPS/IRIG-B, SDI-VANC
1PPS Levels	0-10Vp-p; 50 Ohms

CONTROL

Ports	Asynchronous Serial, Telnet, Web Browser
Serial Levels	RS-232

AUDIO INPUT

Ports	Two independent stereo inputs
Format	Balanced (Line Level)
Levels	2.8Vp-p (1Vrms)
Impedance	10K Ohms

AUDIO COMPRESSION

Channels	None, Left, Right, Stereo
Algorithm	MPEG-1 Layer I/II or ADPCM
Sample Rates	48Ksps

LATENCY

Encoder	<50ms (per channel)
Enc/Dec Tandem	<100ms

ENVIRONMENTAL

Temp/Alt (Op)	DO-160D, Section 4, Category D2 - 40ºC to +71ºC
Temp/Alt (Non-Op)	DO-160D, Section 4, Category D2 - 55ºC to +85ºC
Humidity	DO-160D, Section 6, Category B 5%-95% RH, non-condensing
Vibration	DO-160D, Section 8, Category S, Figure 8-3, Profile M
Shock	DO-160D, Section 7, Category A, Figure 7-2, Operational (6g, 11ms, sawtooth)

EMI

MIL-STD-461E	CS101, CS114-116, RS103, RE102, CE-102
DO-160E	Section 18, AF Conducted Susceptibility Section 21, Conducted Emissions

POWER

Volts	+28VDC
Watts	20W

SIZE

Chassis	1.75"H x 19"W x 12"D

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